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PRELIMINARY

SATURN LAUNCH VEHICLE

INTERFACE REQUIREMENTS SPECIFICATION

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30 September 1962

NAS 9-150

Approved by [redacted]

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CONTENTS

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PRELIMINARY

SATURN C-1 INTERFACE SPECIFICATION

1. SCOPE

1.1 Scope. - This specification delineates the interface requirements between the Apollo spacecraft adapter and the Saturn C-1 launch vehicle. Figure 1 reflects the C-1 launch vehicle configuration.

2. APPLICABLE DOCUMENTS

2.1 Applicability. - The following documents of the issue in effect on the date of contract, form a part of this specification to the extent specified herein.

SPECIFICATIONS

North American Aviation, Inc.
Space and Information Systems Division

SID 62-700-2	Preliminary Apollo Spacecraft Requirements Specification

DRAWINGS

Marshall Space Flight Center

10M03208	Instrument Unit - Payload Interface Details
DJ2-376-05135	Tooling Master - Intrument Unit-Payload Interface

2.2 Precedence. - The order of precedence in the case of conflict shall be as follows:

(a) The contract

(b) This specification

(c) Other documents referenced herein.

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3. REQUIREMENTS

3.1 General. - The physical interface between the Apollo spacecraft adapter and the Saturn C-1 launch vehicle is defined as the "field splice" between the lower surface of the adapter, which physically adapts the spacecraft to the launch vehicle, and the instrument unit. The physical interface between the spacecraft and the "Q Ball" shall be the area of attachment of the "Q Ball" to the launch escape system. Figure 2 reflects interface area.

3.1.1 Physical Compatibility. - The lower mating surface of the adapter shall be physically compatible with the upper peripheral surface of the instrument unit as reflected in NASA MSFC Drawing 10M03208.

3.1.2 Electrical Compatibility. - The electrical cable carrying the "Q Ball" signals to the interface area shall be provided by the contractor and shall terminate at the "Q Ball" end in a Bendix connector, part number PT-06-SE-14-195(SR). The cable shall terminate at the launch vehicle interface end into a Bendix connector, part number PT-00-SE-24-SY. Bendix connectors PT-00-SE-24-S and PT-00-SE-24-SX shall also be supplied and installed by the contractor.

3.1.2.1 Interstage Connections. - Interstage connecting from the booster to the spacecraft shall be accomplished by electrical cables terminating in Bendix connectors, part numbers 75-25-1188-61PY, 75-25-1188-61P, and 75-25-1188-61PX.

3.2 Hardware Responsibilities (NAA). - The contractor's hardware responsibilities for the Saturn C-1 launch vehicle and the Apollo spacecraft adapter interface shall be as follows:

(a) Adapter

(b) Hardware for attaching the adapter to the launch vehicle instrument unit.

(c) An air conditioning barrier shall be provided in the adapter on all C-1 (Block II) launch vehicles.

(d) Electrical connectors, Bendix part numbers PT-00-SE-24-61-SY, PT-00-SE-24-61-SX, and PT-00-SE-24-61-S.

(e) Hardware for attaching electrical connector lanyards to the adapter.

(f) Provisions for mounting the "Q Ball" assembly on the launch escape system.

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(g) Electrical connector, Bendix part number PT-06-SE-19S(SR) to mate with "Q Ball" connector.

3.2.1 Hardware Responsibilities (Non-NAA). - Non-NAA hardware requirements will be as follows:

(a) Electrical cables for interstage connection and electrical connectors into which these cables terminate, Bendix part numbers 75-25-1188-61PY, 75-25-1188-61-PX, and 75-25-1188-61P.

(b) A master tool for establishing and control of hole patterns for mating surface NASA MSFC Drawing DJ2-376-05135.

3.3 Environment. - Environmental requirements for the Apollo spacecraft adapter and the Saturn C-1 launch vehicle interface shall be as specified in Specification SID 62-700-2 (as applicable).

4. QUALITY ASSURANCE

4.1 Reliability. - The reliability of the interface between the Saturn C-1 launch vehicle and the Apollo spacecraft adapter shall be as applicable in Specification SID 62-700-2 (as specified).

5. PREPARATION FOR DELIVERY

Not Applicable.

6. NOTES

6.1 Intended Use. - This specification is intended to be used as the contract document which describes the Saturn C-1 launch vehicle and the Apollo spacecraft interface requirements.

6.2 Definition. - The "Q Ball" assembly referred to in this specification is a device for sensing and measuring the angle at which the longitudinal axis of the vehicle intercepts the airstream.

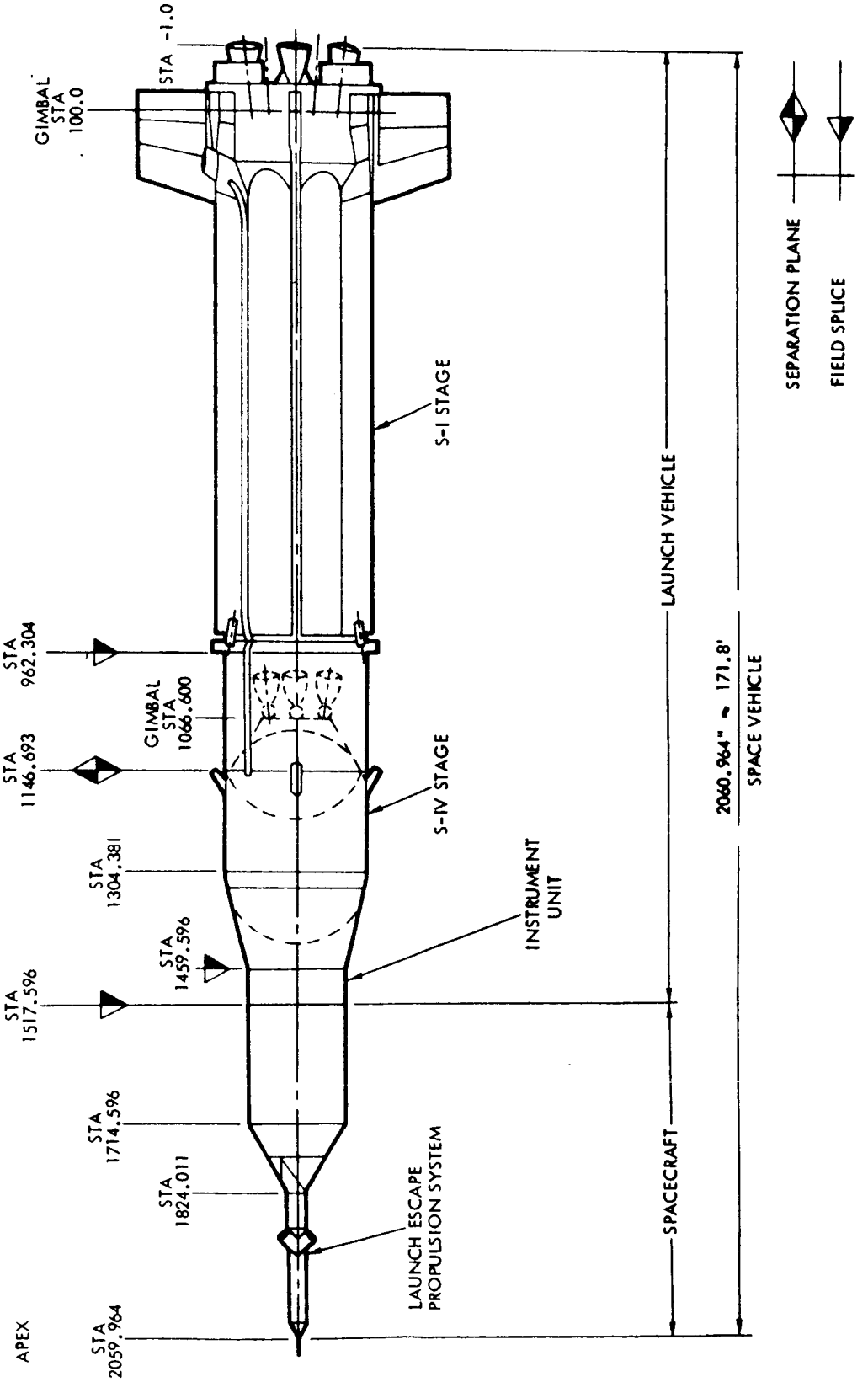
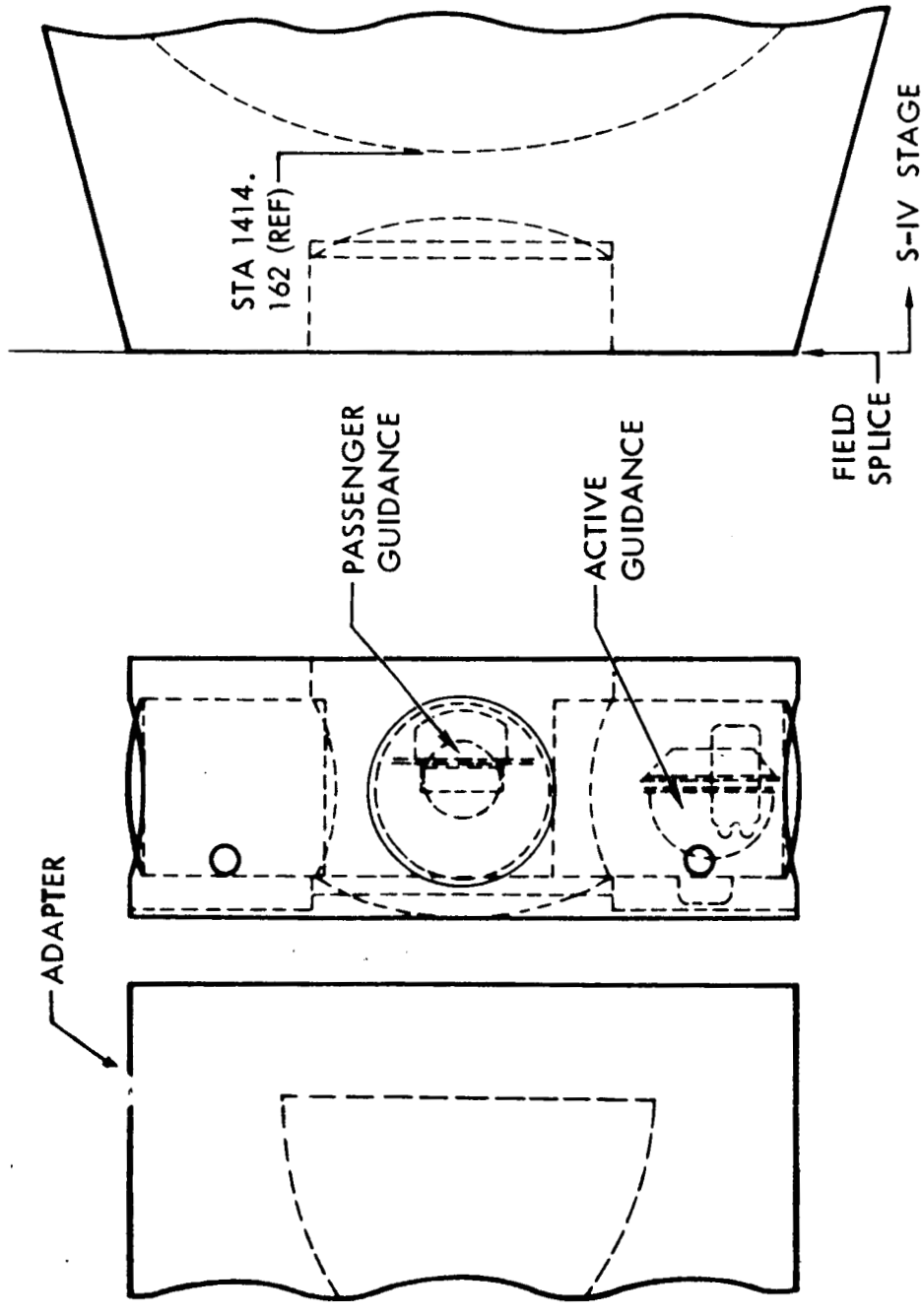


Figure 1. Saturn C-1 and Apollo Spacecraft Configuration (Orbital Payload Version)



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